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THE STATUE OF ERASMUS, AT ROTTERDAM.

ERASMUS.

ERASMUS may be considered to have been the most learned man of his time. This is saying much of one who lived in the reign of our Eighth Henry, and was intimate with Dean Colet*, Linacre†, Grocyn‡, William Latimer, Lily, the Grammarian§, and Sir Thomas More||; all Englishmen, and great men in their generation. In a letter from London, in 1497, to a friend in Italy, (for Erasmus lived much in England,) he says, "When Colet discourses, I seem to hear Plato himself; in Grocyn I admire an universal compass of learning; Linacre's acuteness, depth, and accuracy, are not to be exceeded; nor did nature ever form anything more elegant, exquisite, and better accomplished than More! It would be endless to enumerate all; but it is surprising to think how learning flourishes in this happy country."

Having introduced the subject of this memoir with well-deserved praise, and in excellent company; and having, moreover, endeavoured to gain the attention of our readers by quoting his high opinion of England, and its learned men, we must go back in order of time, to state that Gerard, afterwards called Desiderius Erasmus Roterodamus, was born at Rotterdam, October 28, 1467. His father was a physician named Gerard. This name, between which and Desiderius Erasmus there does not, at first sight, appear to be any affinity, the son dropped early in life. "But," says Dr. Jortin, "in his youth, he took the name of Erasmus, having before gone by that of Gerard, which in the German language means *amiable*. Following the fashion of learned men of those times¶, who affected to give their names a Latin or Greek turn, he called himself *Desiderius*, which in Latin, and *Erasmus*, which in Greek, has the same signification as Gerard." His third name he took in compliment to the city which produced him, and which continues to pay back the distinction, with interest, and constantly-reflected honour.

A notion prevails in Holland that Erasmus was reckoned dull as a child, though, on the other hand, it appears that his father, on discovering in him early marks of talent, resolved to give him the best education in his power. Both these accounts may be true. The wretched and heavy kind of school learning then in fashion was, probably, against the genius of a sharp and sensible boy; and, indeed, when he was afterwards sent, at nine years of age, to school at Deventer, at that time one of the best in the Netherlands for classical literature, he gained such a name, that one of the masters pronounced of him what afterwards came to pass, that "he would one day prove the envy and wonder of all Germany." While a boy at school he had the misfortune to lose his father and mother; she died of the plague at Deventer, whither she had come to see and take care of her son; and Gerard, her husband, did not long survive his bereavement. The plague drove Erasmus from school, when he was about fourteen; upon which his guardians, who seem to have treated him extremely ill, in order to get what little fortune he owned into their hands, resolved to force him into a monastery. Thus he passed some unprofitable years, changing from one convent to another, eager to escape, utterly averse to the selfish and monotonous life of the monks, and gaining by experience that knowledge of monastic

miseries and evils, of which he afterwards availed himself in his published works. Happily for him he found an opportunity, through the Archbishop of Cambray, who offered to serve him, of leaving the monastery at Stein, and studying, as well as taking pupils, at the University of Paris; but before his removal to Paris he had been ordained a priest by the Bishop of Utrecht. Among his pupils were some English noblemen, particularly William Blount, Lord Mountjoy, who was afterwards his great friend and patron, and at whose invitation he paid his first visit to England.

Previously to this it appears, the constitution of Erasmus had suffered so much, partly from over-exertion and partly from that accompanying fault, too common among studious men, *self-neglect* in point of health, that from being a person of strong frame he became weak and delicate. At Oxford he cultivated the friendship of the great men whose names are recorded in the beginning of this paper, most of whom were then the heroes of a literary warfare, and successfully engaged in introducing into the University that alarming novelty, the study of Greek! In the attractive pursuit of the dead languages he took an amazing interest, being determined to make them serve high purposes, namely, the interests of sacred knowledge; and, being then very poor, he declared that "as soon as he could get any money, he would first buy Greek books and then clothes." Passages like these in the life of a man whose fame, even at that time, rang throughout Europe, are a sad reflection, if not upon the times in which he flourished, at least on those distinguished and wealthy characters who affected to call themselves his patrons, and whose conduct, if it were general, would go far to justify Dr. Johnson's definition of the word, Patron.

Our scholar had by this time published his *Adages*, as well as some other learned and elegant works in Latin, the then general language of learned writers, and had risen to be a perfect, though self-taught, Grecian. There is an old saying, that a rolling stone gathers no moss; to the truth of which Erasmus seems to form an exception, for he carried his *locomotiveness* to a fault. We find him at Paris, Cambray, Orléans, Louvain, Turin, and Bologna, appearing to settle in each place, but changing again for fresh scenes and faces, yet gathering additional knowledge and heightened fame wherever he went. England, however, was the principal magnet; and no wonder—when, as he tells Colet in 1506, "There was no country which had furnished him with so many learned and generous benefactors as even the single city of London." His high character of a ripe scholar and a good one, travelled before him when he visited Rome; and the leading divines of that city vied with each other in paying attentions to one so distinguished for genius, and for his exertions as a restorer of learning. It yet remained for him to establish his fame as a Reformer of Religion, or rather a Restorer of the ancient Faith.

On the death of Henry the Seventh, and the succession of his son Henry the Eighth, the friends of Erasmus entreated him to visit England once more, and enjoy the patronage of the young king, to whom he was well known. He accordingly quitted Rome; and having arrived in England, where he lodged with Sir Thomas More, he soon began to employ his wit against the Pope, and the court of Rome, by writing with wonderful rapidity a most ingenious work entitled *Moria Encomium*, or, *The Praise of Folly*; a composition, which with his inimitable *Colloquies*, entailed upon him the unfeigned hatred of the Romish church. At Cambridge, whither he was invited by Fisher,

* The pious and magnificent founder of St. Paul's School, of which he made Lily the first master.

† One of the most eminent physicians and scholars of his age; founder and first President of the College of Physicians.

‡ A distinguished Greek and Latin scholar, and one of the revivers of literature in this country.

§ Both Latimer and Lily greatly contributed, against vast opposition, to introduce the cultivation of Greek at Oxford.

|| See *Saturday Magazine*, Vol. IV., p. 220.

¶ Melancthon, for instance; *Saturday Magazine*, Vol. VII., p. 92.

Bishop of Rochester, he was promoted to the Lady Margaret's professorship of Divinity. He was Greek professor at Oxford, and rector of Aldington, in Kent: still, however, he continued travelling and writing, and provoking replies to the attacks, which, in the struggle for truth, he repeated in all the forms of learned controversy. Some of these answers irritated and annoyed him; while one publication of the day, in Latin, entitled, *The Letters of obscure Individuals*, the authorship of which was wrongly attributed to himself, was so amusing, that it threw him on the perusal into a violent fit of laughter, and thus cured him of an abscess in the face: it broke by the exertion, and never troubled him again!

But the writings of this remarkable man now began to tell upon the great event of the Reformation, which was then approaching, and in the advancement of which he greatly assisted, by opposing ignorance and superstition, while he encouraged toleration, the promotion of knowledge, and genuine piety. "Erasmus," it was said at the time, with reference to the Reformation, "laid the egg, and Luther hatched it." In 1516, was printed and published at Basil, Erasmus's edition of the New Testament, a work of infinite labour; labour so severe, he tells us, as, in fact, to destroy his constitution. He also put forth the works of St. Jerome in six folio volumes,—a grand addition to sacred literature, which, while it occasioned an immense sacrifice of time and health in its collection and arrangement, tended to raise still higher the fame of the editor*.

Yet Erasmus had his faults. Indecision, and an undue love of great men's praise, beset him at a trying moment; and strange to say, notwithstanding his clear convictions on the erroneous and unscriptural character of the Romish Church, as evinced in all his works, he shrunk from exhibiting any open proof of his attachment to the reformed religion. He was startled at the magnitude of the change, and probably not a little vexed at the boldness of Luther, who did not hesitate to quarrel with him for his lack of courage in so good a cause. For whilst that eager champion of Protestantism went warmly and vigorously to his work, Erasmus treated his opponents with civility, or was content with playing off against them the lighter weapons of wit and ridicule; and not being openly separated from a church, the forms and traditions of which he abhorred and despised, he did not abandon its discipline. He even dedicated one of his publications to Pope Adrian the Sixth, in language of timidity and compliment: the succeeding Pope invited him to Rome; and Paul the Third, knowing his power, and wishing, perhaps, if not to gain him over, to keep him quiet, is said to have designed for him the honour of a cardinal's hat. But whatever might have been the real reasons of Erasmus in refusing these preferments, he pleaded his ill health and poverty—while the deeper motive probably lay in his objections to popery, and his distrust of those whom he had assailed in his writings. In 1536, he became exceedingly ill; and was aware for some time before his death, that his disease, which was dysentery, was too likely to terminate his life. He died in July 1536, aged 69, at Basil, and was buried in the cathedral church of that city, where his tomb in marble is to be seen, with a Latin inscription. His statue in bronze, as represented in the engraving, stands on an arch crossing one of the canals at Rotterdam, and the house in which he was born is still shown. The original statue was of wood, and was erected in 1549; it was succeeded in 1555 by one of

stone; and in 1622 by the present, which is ten feet high, and is the work of Henry de Reiser. M.

THERE is a story in the Arabian Nights' tales of a king who had long languished under an ill habit of body, and had taken abundance of remedies to no purpose. At length, says the fable, a physician cured him by the following method. He took a hollow ball of wood, and filled it with several drugs; after which he closed it up so artificially that nothing appeared. He likewise took a maul, and after having hollowed the handle, and that part which strikes the ball, he enclosed in them several drugs after the same manner as in the ball itself. He then ordered the sultan, who was his patient, to exercise himself early in the morning with these rightly-prepared instruments, till such time as he should perspire: when the virtue of the medicaments perspiring through the wood, had so good an influence on the sultan's constitution, that they cured him of an indisposition which all the compositions he had taken inwardly had not been able to remove. This eastern allegory is finely contrived to show us how beneficial bodily labour is to health, and that exercise is the most effectual medicine. Absolutely necessary, however, as exercise is, there is another great preservative of health, which in many cases produces the same effects as exercise, and may, in some measure, supply its place, where opportunities of exercise are wanting. This preservative is temperance, which has those particular advantages above all other means of health, that it may be practised by all ranks and conditions, at any season, or in any place. It is a kind of regimen into which every man may put himself, without interruption to business, expense of money, or loss of time. If exercise throws off all superfluities, temperance prevents them; if exercise clears the vessels, temperance neither satiates nor overstrains them; if exercise raises proper ferments in the humours, and promotes the circulation of the blood, temperance gives nature her full play, and enables her to exert herself in all her force and vigour; if exercise dissipates a growing distemper, temperance starves it.—*Spectator*.

A FEW years ago, when the scarcity of provisions was so severely felt throughout Italy, the inhabitants of the Tuscan Apennines, who rely very much upon chestnuts for their support, would have been almost exterminated, from the complete failure of that crop, had they not been persuaded the year before into the more general cultivation of the potato. The prejudice against it was so great, that it was only by offering a reward to each peasant for a certain quantity of his own cultivation, that the government succeeded in the attempt. It is to the credit of the Tuscan character, that numbers, who in the time of famine had felt the benefit and importance of this vegetable, when they produced certificates of their being entitled to the government bounty, declined accepting it, declaring that they no longer wanted bribing into the belief of the great utility of a plant to which they owed the preservation of their lives.—*Diary of an Invalid*.

THE AUTUMN EVENING.

BEHOLD the western evening-light!

It melts in deepening gloom;

So calmly Christians sink away,

Descending to the tomb.

The winds breathe low; the withering leaf

Scarce whispers from the tree;

So gently flows the parting breath,

When good men cease to be.

How beautiful on all the hills

The crimson light is shed!

'Tis like the peace the Christian gives

To mourners round his bed.

How mildly on the wandering cloud

The sunset beam is cast;

'Tis like the memory left behind,

When loved ones breathe their last.

And now, above the dews of night,

The yellow star appears;

O faith springs in the heart of those

Whose eyes are bathed in tears.

But soon the morning's happier light

Its glory shall restore,

And eyelids that are seal'd in death,

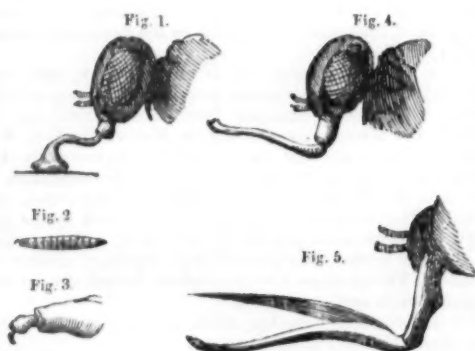
Shall wake, to close no more.—PEARBODY.

* The works of Erasmus were published at Leyden, in 1703, in ten large and closely-printed folio volumes,—a rare monument of talent and industry.

THE HOUSE-FLY.

How frequently it happens that the objects which come most commonly under our notice, are those with which we are least acquainted. Every school-boy can describe the form and the habits of a lion or a tiger, or the wonderful luminous properties of the lantern-fly; but yet, with all this knowledge of the wonders of foreign lands, how few are there, even of the well informed, to whom the natural history of so common an insect as the House-fly is known. The following observations occur, in alluding to this subject, in Kirby and Spence's beautiful introduction to Entomology.

"You have, doubtless, like every one else, in the showery days of summer, felt no little rage at the flies, which at such times take the liberty of biting our legs, and contrive to make a comfortable meal through the interstices of their silken or cotton coverings. Did it, I pray, ever enter into your conception, that these blood-thirsty tormentors are a different species from those flies which you are wont to see extending the tips of their little proboscis to a piece of sugar, or a drop of wine? I dare say not. But the next time you have sacrificed one of the former to your just vengeance, catch one of the latter, and compare them. I question if, after the narrowest comparison, you will not still venture a wager that they are of the very same species; yet you would most certainly lose your bet. They are not even of the same genus, one belonging to the genus *Musca* (*Musca domestica*), and the other to the genus *Stomoxys* (*Stomoxys calcitrans*); and on a second examination you will find that, however alike in most respects, they differ widely in the shape of their proboscis; that of the *Stomoxys* being a horny, sharp-pointed weapon, capable of piercing the flesh, while the soft, blunt organ of the *Musca* is perfectly incompetent to any such operation. In future, while you no longer load the whole race of the house-fly with the execrations which properly belong to a quite different tribe, you will cease being surprised that an ordinary description should be insufficient to discriminate an insect."



The annexed engraving represents the distinction between the common house-fly and that species which is so frequently met with in the autumn, when according to the common belief, "flies bite." Fig. 1, is the head and proboscis of the house-fly considerably magnified; when thus enlarged, the difference between its trunk and that of the *Stomoxys*, fig 4, (also magnified,) is very palpable; in one the trunk is a mere sucking instrument, while in the other it is a sheath, containing a sharp-pointed instrument. Fig. 5 represents this sheath very highly magnified, and the weapon of offence raised from the groove in which it usually lies.

Although the common house-fly is so well known, in its perfect state, as to require no description, yet the places in which it is bred, and the appearance of the larva, is very little understood; by some it is said to deposit its eggs in the Autumn in stagnant waters, where they remain and undergo the usual changes, until, in the Spring, the perfect insect makes its appearance. According to the celebrated naturalist, De Geer, (from whose works figs. 2 and 3 are copied,) fig. 2 is a representation of the larva, which he found in wet horse-dung; fig. 3 is a magnified view of one extremity of the same larva, showing a curiously-contrived hook, by which the creature is enabled to move from place to place, and to secure itself from removal from any occasional cause. It is most likely that the eggs of our common fly are deposited in many other substances besides horse-dung, where the necessary qualifications of moisture and warmth are to be found.

Annoying as flies appear to be to us in hot weather, we can form no idea of their numbers and troublesome nature in the warmer climates of the south. "I met," says Arthur Young, in his travels through France, "between Pradelles and Shuytz, mulberries and flies at the same time; by the term *flies*, I mean those myriads of them which form the most disagreeable circumstance of the southern climates. They are the first torments in Spain, Italy, and the Olive District of France; it is not that they bite, sting, or hurt, but they buz, tease, and worry; your mouth, eyes, ears, and nose, are full of them; they swarm on every eatable. Fruit, sugar, milk, every thing is attacked by them in such myriads, that if they are not incessantly driven away by a person who has nothing else to do, to eat a meal is impossible. They are, however, caught on prepared paper, and by other contrivances, with so much ease, and in such quantities, that, were it not from negligence, they could not abound in such incredible numbers. If I farmed in these countries, I think I should manure four or five acres every year with dead flies."

JOHN SMEATON, the celebrated engineer, exhibited at a very early age great strength of understanding, and originality of genius. His playthings were not the toys of children, but the tools with which men work; and he appeared to take greater pleasure in seeing the men in the neighbourhood work, and asking them questions, than in anything else. One day he was seen, to the no small alarm of his family, on the top of his father's barn, fixing up something resembling a wind-mill. On another occasion, he watched some men who were fixing a pump at a neighbouring village; and, observing them cut off a piece of bored pipe, he procured it, and actually made with it a working pump that raised water. All this was done while he was in petticoats, and before he had reached his sixth year.

About his fourteenth or fifteenth year, he had made him self an engine to turn rose-work; he also made a lathe by which he cut a perpetual screw in brass,—a thing but little known at that time. In this manner he had, by the strength of his genius, and indefatigable industry, acquired, at the age of eighteen, an extensive set of tools, and the art of working at most of the mechanical trades, without the assistance of a master. Of his talents as an engineer, the Eddystone Light-house, near the western entrance of the British channel, is a remarkable monument.

THERE are those who are rich in their poverty, because they are content, and use generously what they have: there are others, who in the midst of their riches, are really poor, from their insatiable covetousness or profusion.—CALMET.

THE day is long when it is well distributed, and affords sufficient time for serious employments, for exercise, and pleasure.—PHILIP DE MORNAY.

THE COMET.

"The star! the star! the fiery tressed star!"
 "Which now pursues its long and trackless voyage
 Down the deep bosom of unbounded space.
 And there, the angel of each separate star
 Folding his wings in terror o'er his orb
 Of golden fire, and shuddering till it passed
 To pour elsewhere Jehovah's cup of vengeance."
 MILMAN'S *Belshazzar*.

MYSTERIOUS Stranger! whence art thou? and wherefore on
 thy way?

Is thy bright path beset with suns which yield eternal day?
 'Com'st thou from 'neath the great white throne, a messenger
 of ill,

To pour o'er earth the vial drops that burn, and blight, and kill?

Art thou that fallen mighty One, who filled an angel's throne,
 Now wandering in immensity, there ever doom'd to roam?
 Can'st thou not view that land afar, once thine own happy seat,
 And sigh for the bright and beautiful which there in gladness
 meet?

Or art thou only the red-car, the fiery-wheeled throne,
 Of some archangel, on his way to regions yet unknown?
 Or the chariot of the cherubim, from the mercy seat on high,
 By Him on a gracious errand sent, whose glory fills the sky?

But art thou, as I ween thou art, a world both bright and fair,
 The work of an Almighty Hand, the object of his care?

'Twas He who marked thy radiant course with his unerring
 line,

And bade thee in his gem-pav'd courts in blazing beauty shine.

Or can'st thou tell what is yon zone, yon star bespangled way,
 Circling the vast unbounded space with mild enduring ray?
 Is its broad circuit a bright path to the archangels given
 Or the diamond walls and minarets of their palaces in Heav'n?

Do'st thou not pause thee in thy course, nor check thy wild
 career,

As those most pure and pearly gates, and crystal towers draw
 near?

Do not the perfumed breezes from that land of light and love
 Waft the songs of the redeemed, all other songs above?

Hast thou never, in thy wanderings through the trackless
 fields of light,

Met the countless armed host of Heav'n arrayed with power
 and might?

Nor the ransomed crowds of sinners in their voyage to that
 shore

Where the wicked cease from troubling, and the weary toil
 no more.

Yes, 'tis to thee the azure way and silvery path is given,
 The vast unmeasured star-paved floor of cherubim-trod Heav'n;
 Thou art pavilioned far beyond the journeys of the sun,
 For when his daily race is o'er, thy journeying's scarce begun.

Far in the blue ethereal plain, no bound nor landmark there,
 Around thee are the azure wilds, the pure unbreathed air;
 But the golden chain that binds thee with an ever-circling
 band

Is held by Him who changes not, by an Almighty hand.

And e'en beyond the limits of thy far stretching chain,
 The frontiers of his kingdom lie, Jehovah's wide domain;
 And there in that most holy place, where angel foot ne'er trod,
 The brightness of his presence dwells, our own our Fathers'
 God!

Be thou an ensign of his wrath, the herald of his will,
 Upon earth's guilty nations now, his judgments to fulfil,
 Or in mercy sent to wake us from life's delusive dream
 By Him, who mighty to create, is mightier to redeem.

Yet thou with all on this fair earth, or in the sparkling sea,
 With the lamps of living gold that light heav'n's azure canopy,
 And the pictured scenes which in silver float or in floods of
 glory roll,

With the crimson curtain'd skies shall then be as a burning
 scroll.

When on his cloudy throne shall come, the last great husband-
 man,

And o'er creation's utmost bounds, shall wave his stormy fan;
 Sweeping the guilty sons of men with their pomp and pride
 away,

But gathering his redeemed to dwell with him in endless day.

Stonebrakes.

W. H. BROWNLEE.

THE USEFUL ARTS. No. XI.

DISTILLING.

EVERY liquid which is susceptible of fermentation will
 yield alcohol, or *spirits of wine*, by distillation, after the
 first or vinous stage of that chemical action has taken
 place. Now as all liquids which contain starch or sugar
 of any kind will ferment if the fermenting principle is
 present, the juices of all vegetables containing farina or
 saccharine matter may be employed to obtain alcohol from.

The peculiar flavour of the different spirits obtained from
 these vegetable substances, depends on the presence of
 some foreign matter, as an essential oil, &c., for the alcohol
 or basis is the same, from whatever source it may be
 obtained.

The process of distillation is founded on the principle of
 different degrees of caloric being requisite to convert
 different liquids into vapour. Thus, if water and alcohol
 are mixed and exposed to a moderate heat, sufficient to
 volatilize the spirit,—but not to convert the water rapidly
 into steam,—and the vapour arising from the mixture, be
 collected and condensed in a separate vessel, the liquid will
 be found to be *stronger*, or to contain more alcohol in pro-
 portion to the water, than that from which it was obtained.

The instrument contrived to effect this separation is
 called a STILL. It consists of a large copper or boiler, with
 a vaulted *head*, from which rises a funnel-shaped tube,
 which, being bent downwards, terminates at some distance
 from the fire of the boiler, in a leaden, copper, or tin tube,
 made into a spiral form of many turns, and hence called
 the *Worm*. This tube is enclosed in a tub, or vat, capable
 of holding water, and the end of the worm terminates in a
 tap, which passes out of the vessel at the bottom.

When the liquid to be distilled is put into the boiler and
 is heated, the vapour produced passes through the head and
 into the worm, and, by the coldness of the water in the tub,
 is condensed into a liquid, which may be drawn off at the
 tap. This liquid product is called *singlings*, and is again
 returned to a still, and the process repeated,—the resulting
 condensed liquid being each time stronger, or containing
 less water,—till the spirit is obtained of the requisite purity,
 or at what is termed *proof*. All spirit for drinking remains
 diluted with a large proportion of water. Instead of re-
 distilling the products, after a certain number of times, other
 chemical processes are employed for the purpose of sepa-
 rating the alcohol from the water, and from any bad-
 flavoured essential oil which may have been distilled over
 from the original liquid. These processes are generally
 termed the *rectification* of the spirit, and vary for every
 different liquid employed.

There are three principal spirits used in this country;
 of the first of these there are several varieties, all obtained
 from grain of some sort, and known by the names of Geneva,
 Whisky, Hollands, &c.

Gin, or *Geneva*, is procured from raw barley, oats, and
 malt, mixed together in certain proportions. Every particle
 of soluble matter is obtained from these ingredients by
 repeated mashings, (see the article BREWING, Vol. VI.,
 p. 243.) The worts are then made to ferment by the
 addition of yeast, as for brewing, but the fermentation is
 continued till all the saccharine matter is converted into
 alcohol. This fermented liquor is called *wash* by the dis-
 tillers. The grains are put into the still along with the wash,
 and the first product being redistilled, the spirit obtained is
 rectified. The peculiar flavour is given by infusing a few
 juniper-berries and some hops.

The Dutch employ barley, malt, and rye meal only to
 distil their Hollands from.

Irish Whisky, *Potsheen*, or *Potteen**, owes its highly-
 prized flavour to the mode in which the usual processes are
 conducted, rather than to any peculiarity in the grains.
 The barley is wetted with bog-water, in order to excite
 germination, and the malt is dried with turf instead of coal.
 The malt is mixed with about one-fourth of raw corn, and
 the mashing is made in a tun, the bottom of which is covered
 with young heath and oat-husks, to supply the place of a
 false one. When the wash begins to boil in the still, the
 fire is suddenly quenched, and the spirit which runs, though

* The account of the peculiar process of manufacturing potteen,
 is taken from Professor Donovan's work, that gentleman having, at
 some pains, procured an opportunity of witnessing the whole in a
 genuine Irish illicit distillery. Mr. Donovan is doubtful whether
 the turf used is the cause of the flavour of the spirit, but attributes
 this to the proportions of the grains and the mode of distillation.

weak, is of the true flavour. The *singlings* are distilled again and yield the real potteen.

Rum is a spirit obtained from molasses, or the fluid which drains from the crystallizing sugar; the molasses are diluted with water, fermented and distilled. In the distillation acetic ether passes over, and communicates a strong disagreeable flavour to the spirit, which must be subsequently got rid of. The leaves of different plants are put into the still to give a pleasant taste to the rum.

Brandy is distilled from any wines, but the best is procured from weak French wines, which are unfit for exportation.

In consequence of the enormous quantity of this spirit consumed, every mode of economizing labour and expense is had recourse to: the principal of these is the adoption of a peculiar mode of distillation, which merits description here, and by which fuel is saved. Instead of a single still there are a series of copper vessels, which we shall distinguish as 1, 2, 3, &c. A tube rises from the top of 1, and is bent down again to pass through the top of 2, to near the bottom of that vessel; from the top of 2 another similar tube communicates in the same way with 3, and 3 again communicates with 4, and so on. These tubes are open at both ends, but are soldered air-tight to the holes in the vessels through which they pass, so that there is no opening to the external air by means of them. Each of the vessels being half filled with the wine to be distilled, the fire is applied to the first only, the vapour which passes over is condensed by, and mixed with, the wine in the second, and as this vapour, by the nature of distillation, contains more alcohol than water, the wine in the second vessel is strengthened by the addition, while it is heated by the calorific disengaged from the vapour: and since a less degree of heat is sufficient to convert this stronger liquid into vapour, that which rises from it contains a yet greater proportion of alcohol to the water. This vapour from 2 is condensed again in 3, the wine in which is thus strengthened more than that in 2 was, and the heat imparted to 3, though less than that which 2 acquired from 1, is yet sufficient to distil the stronger wine contained in 3. The action is continued, if necessary, to four vessels, but usually three are sufficient, and the vapour from the last is condensed in a worm in the usual manner, only instead of water, the tub containing the worm is filled with wine, which, getting heated by the process, is pumped back into the first vessel, and is therefore made to boil sooner, and fuel is thus still further economized. This ingenious process was the invention of an uneducated man of the name of Adam, and goes by his name.

Brandy, whatever wine it may have been obtained from, is at first colourless; in France a good deal is used in this state, but the greater part is coloured by different methods. Cognac brandy is put into new oaken casks, and chips of the same wood are also added; the oak communicates a yellow tinge to the spirit, and probably some flavour likewise.

The various liqueurs known by the names of *Eau-doré*, *Maraschino*, *Kirsche-wasser*, &c. consist of brandy, flavoured by the essential oil of different aromatic plants, and sweetened by sugar. Arrack is a name given in the East to spirits generally, and has hence been employed here to designate very different liquors, as that obtained from rice, the cocoa-tree, &c.

The fermented liquids obtained from potatoes, beet, carrot, turnips, the fruit of the potato, service-tree, apples, cherries, &c. have been employed with different degrees of success for obtaining alcohol from. In Kamtschatka, grass is made use of for this purpose, and many plants might, doubtless, be employed with advantage, if it were not for the severity of our Excise laws; but no friend to his species could wish to see the use of spirits as a *drink* increased in any country.

VINEGAR.

THERE are three stages of the action of fermentation which liquids containing saccharine matter undergo. The first, termed the *vinous*, has been sufficiently alluded to in the previous sections on wine and spirits; but any of this class of liquids, after undergoing this stage, if left exposed to the air at a certain temperature, passes on to the second, or to the *acetous*, fermentation; and the liquid in consequence acquires a new set of properties, not less different from those it possessed when alcohol predominated in it, than these were from the qualities of the original liquid. When wine of any kind undergoes this second fermentation, it is converted into *vinegar*, and, in common language,

this term is also applied to the corresponding liquid obtained from malt liquor.

Vinegar is made in England by brewing from malt, and leaving the beer to turn sour, either by exposure to the sun and air in casks, the bung-holes of which are left open, and covered up lightly with a tile to exclude the dust; or else the casks are kept in an apartment warmed artificially to the requisite temperature. It is necessary to bring on, and accelerate, the acetous fermentation, by adding sour beer, lees of wine, or vinegar, to the new beer, for though this fermentation would ensue naturally, yet it would take some months, or a year, or more, to perfect without this assistance. When the vinegar is completed, the fermentation must be stopped by decanting off the liquid from the dregs and lees, fining it, and closing up the vessels containing it. If these processes were delayed, the third stage, or the *putrefactive* fermentation, would come on, and the vinegar would be spoilt.

The vinegar manufactured at Orléans and Saumur is celebrated; it is procured by the following process. Wine of a year old, and just beginning to turn sour, is preferred for the purpose. Two large vats are placed in a chamber artificially warmed to the temperature of about 75°; a trivet is put at the bottom of each vessel, on which is laid a layer of green vine-twigs, and on this again are heaped up the stalks of raisins or grapes, to within a foot of the top. One of these casks is filled, and the other about half-filled with the wine. In about four-and-twenty hours the liquor is drawn off from the full into the other vat; this alternate filling up one cask out of the other is continued daily for about a fortnight or three weeks, when the vinegar will be perfected.

At Orléans, a vat, capable of containing about 130 gallons, is one quarter filled with boiling vinegar, and is left for eight days. The wine is contained in another tun, in which chips of beech, saturated with vinegar-lees, are thrown; at the end of that period about five or six quarts of the wine are drawn off into the vinegar, and this quantity is added every eight days, till that vat is filled up, and the whole will be found to be converted into vinegar.

The processes employed at our large manufactories for making vinegar from raisins, agrees in principle with that just described, only the implements are better constructed, and are more complete.

There are several modes of strengthening vinegar, which is not sufficiently acid. If a cask of vinegar be exposed to the air in a frosty night, the ice which will be found in it on the following morning, will consist of *water* only, congealed, and the liquid that remains will be considerably stronger, in consequence of the abstraction from it of so much water which diluted it: if the process be repeated several times, vinegar very much concentrated may be obtained. The same action will take place with wine, if exposed to cold, the water diluting it being alone congealed, and the remaining liquid will contain the whole of the original quantity of alcohol. The chemical principle of this process is the same as that on which distillation is founded.

If sugar be added to vinegar, in a few weeks this liquid will be found materially increased in strength. Whether the sugar, when dissolved, passes through the vinous into the acetous fermentation is not known, but the fact is certain.

Vinegar consists of *acetic acid*, coloured and flavoured by the skins of the fruit, or partaking of the tint and taste of the fermented liquid which furnished it. The acetic acid may be obtained from *wood* pure, by the following process; pieces of oak, beech, ash, or almost any wood, except that of the *fir* tribe, are put into a large cylindrical iron retort, closed air-tight at both ends, and surrounded by fire in a furnace; a tube from one end is carried through a cistern of water, and terminates in a *worm* like that of a common still; in fact, this apparatus is no other than a still for *distilling* green wood. The products from the wood consist of *water*, *tar*, and *acetic acid*, the acid and water with some tar mixed together, will be found floating in the receiver on the top of the greater part of the latter substance, and are separated from it mechanically by means of a pump. The impure acid is then distilled by a low heat, and thus another portion of tar is separated from it; but it requires further, and more complicated chemical treatment, which cannot be described here, to purify it entirely from foreign admixture.

Acetic acid, when pure, is as clear and colourless as water, and of such a strength as to require to be diluted with eight or nine times its bulk of water, to reduce it to

an equality in that respect with the strongest vinegar obtained by the ordinary processes: when thus reduced, and flavoured and coloured by the essential oil of the grape, or other fruit, it cannot be distinguished from ordinary vinegar. The tar obtained by this process is available for all the purposes to which that substance is applied, while the charcoal, or residuum in the retorts, is of the best quality.

The uses of vinegar in preserving animal and vegetable food, and as a condiment to many dishes, are well known, and have been already alluded to. Acetic acid is also employed in many arts, as in manufacturing white lead, and sugar of lead, and also in surgery.

BIRDS CLUSTERING FOR WARMTH.

Through lofty groves the ring-dove roves,
The path of man to shun it;
The hazel-bush o'erhangs the thrush;
The spreading thorn the linnet.
Thus every kind their pleasure find,
The savage and the tender;
Some social join, and leagues combine;
Some solitary wander.—BURNS.

It is curious to witness the assistance which some animals will afford to each other under circumstances of danger or of difficulty. I have observed it in several instances, and it shows a kindness of disposition which may well be imitated. It is not, however, confined to their own species, as the following fact will prove. A farmer's boy had fed and taken great care of a colt. He was working one day in a field, and was attacked by a bull. The boy ran to a ditch, and got into it just as the bull came up to him. The animal endeavoured to gore him, and would probably have succeeded, had not the colt come to his assistance. He not only kicked at the bull, but made so loud a scream, for it could be called nothing else, that some labourers, who were working near the place, came to see what was the matter, and extricated the boy from the danger he was in. I have seen cattle, when flies have been troublesome, stand side by side, and close together, the head of one at the tail of the other. By this mutual arrangement flies were brushed off from the head of each animal as well as their sides, and only two sides were exposed to the attacks of the insects. Sheep have been known to take care of a lamb when the dam has been rendered incapable of assisting it, and birds will feed the helpless young of others.

Birds also will cluster together for the purpose of keeping each other warm. I have observed swallows clustering, like bees when they have swarmed, in cold autumnal weather, hanging one upon another, with their wings extended, under the eaves of a house. I have also heard more than one instance of wrens being found huddled together in some snug retreat for the purpose of reciprocating warmth and comfort. The following interesting communication on this subject was made to me by Mr. Allan Cunningham, an author of whom his countrymen are justly proud, and who, I trust, will long continue to delight his admirers with the productions of his pen.

He says, "I have once or twice in my life had an opportunity of answering that touching inquiry of Burns—

'Ilk hapless bird, wee, hapless thing,
That in the merry months o' spring,
Delighted me to hear thee sing,
What comes o' thee?
Where wilt thou cower thy chit'ring wing
An' close thy e'e?'

"One cold December night, with snow in the air, when I was some ten years old or so, I was groping for sparrows under the eaves in the thatch, where you know they make holes like those bored by swallows in the river-banks. In one of these holes I got a

handful of something soft; it felt feathery and warm, and a smothered chirp told me it was living. I brought it, wondering, to my father's house, and took a look at it in the light. The ball consisted of four living wrens* rolled together, the heads under their wings, and their feet pulled in, so that nothing was visible outside save a coating of mottled feathers. This I took to be their mode of keeping themselves warm during the cold of winter. If you ask, if I am sure my memory serves me rightly, I answer Yes; for having allowed one of the wrens to escape, it flew directly to where my father was reading at a candle, and I had the misery of receiving from his hand one of those whippings which a boy is not likely soon to forget.

"When eighteen years old, or thereabouts, I met with something of the same kind: there was a difference, indeed, in the birds, for on this occasion they were magpies†—not birds of song, but of noise. I went out with my brother, now in the navy, one fine moonlight winter night, to shoot wood-pigeons in a neighbouring plantation. The wind was high, and we expected to find them in a sheltered place, where the soil was deep, and the spruce-firs had grown high. As I went cowering along, looking through the branches between me and the moon, I saw what seemed as large as a well-filled knapsack, fixed on the top of a long, slender ash-tree, which had struggled up in spite of the firs, which you know grow very rapidly. I pointed it out to my brother, and seizing the shaft of the tree, shook it violently, when, if one magpie fell to the ground, there were not less than twenty dropt in a lump at my feet. Away they flew, screaming, in all directions. One only remained on the spot which they occupied on the tree, and I shot it, and so settled what kind of birds had been huddled together to avoid the cold. I looked at them before I shook them down for a minute's space or more, and could see neither heads nor feet: it seemed a bundle of old clouts or feathers."—JESSE.

* The Scotch call them *cuttie-wrens*, on account of their short tails.

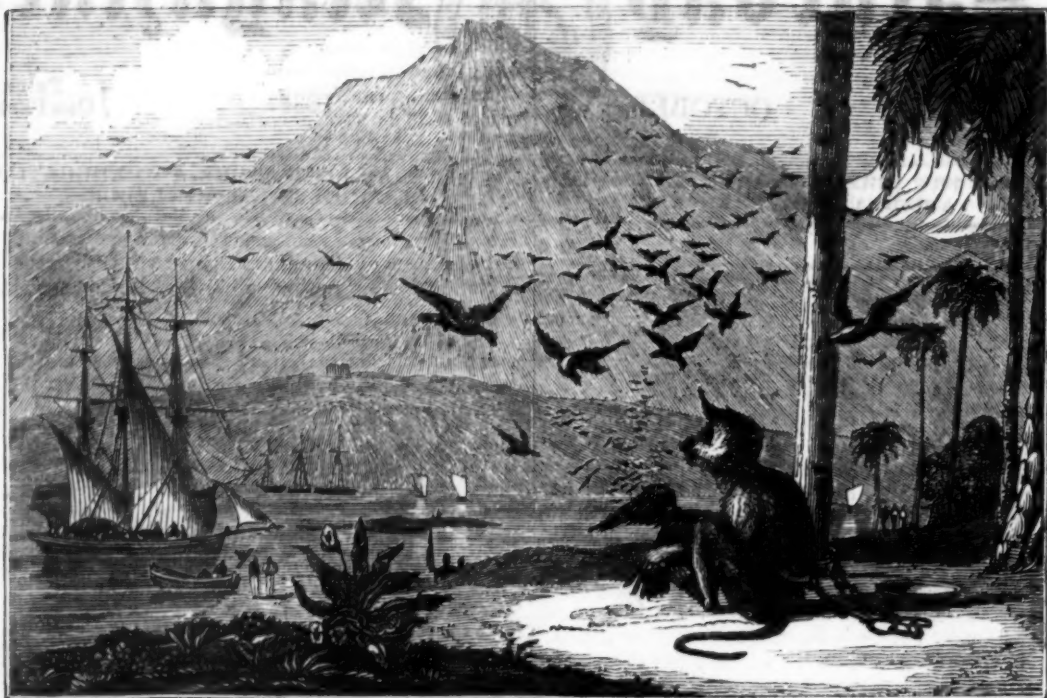
† Magpies are called by the Highlanders, "Plack and Plue Purds," on account of their colour.

THE law of our constitution, whereby the regulated activity of both intellect and feeling is made essential to sound bodily health, seems to me one of the most beautiful arrangements of an all-wise and beneficent Creator. If we shun the society of our fellow-creatures, and shrink from taking a share in the active duties of life, mental indolence and physical debility beset our path. Whereas if, by engaging in the business of life, and taking an active interest in the advancement of society, we duly exercise our various powers of perception, thought, and feeling, we promote the health of the whole corporeal system, invigorate the mind itself, and at the same time experience the highest mental gratification of which a human being is susceptible; namely, that of having fulfilled the end and object of our being, in the active discharge of our duties to God, to our fellow-men, and to ourselves. If we neglect our faculties or deprive them of their objects, we weaken the organization, give rise to distressing diseases, and at the same time experience the bitterest feelings that can afflict humanity—ennui and melancholy. The harmony thus shown to exist between the moral and physical world is but another example of the numerous inducements to that right conduct and activity in pursuing which the Creator has evidently destined us to find terrestrial happiness.—COMBE.

NATIONAL happiness must be produced through the influence of religious laws.—SOUTHEY.

Good sense, and Christian principle, must be in a very languid state, when a disrelish or weariness of life is the predominant feeling.—PRIVATE LIFE.

THE MONKEY AND CROW.



IN the jungles about Tillicherry, there is a large species of monkey, frequently tamed by the natives, and at a village a short distance from this celebrated seaport we had an evidence of the remarkable sagacity of this animal. A few yards from the house of the person to whom it belonged, a thick pole, at least thirty feet high, had been fixed into the earth, round which was an iron ring, and to this was attached a strong chain of considerable length, fastened to a band round the monkey's body. The ring being loose, it slid along the pole when he ascended or descended. He was in the habit of taking his station upon the top of the bamboo, where he perched as if to enjoy the beauties of the prospect around him. The crows, which in India are very abundant and singularly audacious, taking advantage of his elevated position, had been in the habit of robbing him of his food, which was placed every morning and evening at the foot of the pole. To this he had vainly expressed his dislike by chattering, and other indications of his displeasure equally ineffectual; but they continued their periodical depredations. Finding that he was perfectly unheeded, he adopted a plan of retribution as effectual as it was ingenious.

One morning, when his tormentors had been particularly troublesome, he appeared as if seriously indisposed: he closed his eyes, drooped his head, and exhibited various other symptoms of severe suffering. No sooner were his ordinary rations placed at the foot of the bamboo, than the crows, watching their opportunity, descended in great numbers, and, according to their usual practice, began to demolish his provisions. The monkey now began to slide down the pole by slow degrees, as if the effort were painful to him, and as if so overcome by indisposition that his remaining strength was scarcely equal to such exertion. When he reached the ground, he rolled about for some time, seeming in great agony, until he found himself close by the vessel employed to contain his food, which the crows had by this time well-nigh devoured. There was still, however, some remaining, which a solitary bird, emboldened by the apparent indisposition of the monkey, advanced to seize. The wily creature was at this time lying in a state of apparent insensibility at the foot of the pole, and close by the pan. The moment the crow stretched out its head, and ere it could secure a mouthful of the interdicted food, the watchful avenger seized the depredator by the neck with the rapidity of thought, and secured it from doing further mischief. He now began to chatter and grin with every expression of gratified triumph, while the crows flew around, cawing in boisterous chime, as if deprecating the chastisement about to be inflicted upon their captive companion. The monkey continued for a while to chatter and grin in triumphant

mockery of their distress; he then deliberately placed the captive crow between his knees, and began to pluck it with the most humorous gravity. When he had completely stripped it, except the large feathers in the pinions and tail, he flung it into the air as high as his strength would permit, and, after flapping its wings for a few seconds, it fell on the ground with a stunning shock. The other crows, which had been fortunate enough to escape a similar castigation, now surrounded it, and immediately pecked it to death.

The animal had no sooner seen this ample retribution dealt to the purloiner of his repast, than he ascended the bamboo to enjoy a quiet repose. The next time his food was brought, not a single crow approached it.—*Oriental Annual.*

THE FUNERAL AT SEA.

DEEP mists hung over the mariner's grave,
When the holy funeral rite was read;
And every breath on the dark-blue wave,
Seemed hushed, to hallow the friendless dead.

And heavily heaved on the gloomy sea,
The ship that sheltered that homeless one,
As though his funeral-hour should be,
When the waves were still, and the winds were gone.

And there he lay, in his coarse, cold shroud,—
And strangers were round the coffinless;
Not a kinsman was seen among that crowd,—
Not an eye to weep, nor a lip to bless.

No sound from the church's passing bell
Was echoed along the pathless deep;
The hearts that were far away, to tell
Where the mariner lies in his lasting sleep.

Not a whisper then lingered upon the air,—
O'er his body, one moment, his messmates bent;
But the plunging sound of the dead was there,
And the ocean is now his monument!

But many a sigh, and many a tear,
Shall be breathed, and shed, in the hours to come,—
When the widow and fatherless shall hear
How he died, far, far from his happy home!—FINN.

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